

Marked-up versions of the amended claims are provided in an annex to this Response.

**REMARKS**

Claims 7-10 and 17-20 are pending in the present application, having been elected by the Applicant, and claims 1-6, 11-16, and 21-30 have been withdrawn. Claims 7-10 and 17-20 stand rejected under 35 USC §112, second paragraph. Furthermore, claims 7-10 and 17-20 stand rejected under 35 USC §102(b). Claims 7 and 17 have been amended.

The Applicant appreciates the Examiner's thorough examination of the subject application and respectfully request reconsideration of the subject application based on the above amendments and the following remarks.

**35 U.S.C. § 112, SECOND PARAGRAPH REJECTIONS**

The Examiner has rejected claims 7-10 and 17-20 under 35 USC § 112, second paragraph as failing to particularly point out and distinctly claim the subject matter regarded as the invention. Specifically, per the Examiner, the limitation "the two electrodes" in claims 7 and 17, lacks an antecedent basis. Claims 8-10 and 18-20 depend from claims 7 and 17, respectively, and, therefore, are also rejected.

Claims 7 and 17 have been amended and, therefore, the ground for rejection is moot. Accordingly, claims 7-10 and 17-20 are allowable. Moreover, it is respectfully submitted that the subject application is in condition for allowance. Early and favorable action is requested.

35 U.S.C. § 102(b) REJECTIONS

The Examiner has rejected claims 7-10 and 17-20 under 35 USC § 102(b) as being anticipated by U.S. Patent Number 5,173,792 to Matsueda ("Matsueda" or the "Matsueda Reference"). The Applicant respectfully traverse these rejections in light of the above amendments and for the reasons provided below.

The Matsueda reference discloses single display element circuits that provide compensative redundancy elements so that defect in one of the elements can be relieved by removal of the defective element. See, e.g., Matsueda, Abstract. More specifically, Matsueda teaches an embodiment of a redundancy system "wherein two TFTs 140A and 140B and two signal lines  $X_{2m-1}$  and  $X_{2m}$  are provided per display element." Id., col. 15, lines 9-13. Furthermore, referring to FIGs. 11 and 12, an MOS capacitor 170 having three portions 170A, 170B, and 170C is connected to the pixel electrode 141 through a single hole 165. See, e.g., Id., col. 15, lines 25-30. The pixel electrode 141 is also connected to each of the TFTs 140A and 140B through a single hole 162 and 163, respectively. See, e.g., Id., col. 15, lines 55-58. Accordingly,

[w]hen either TFT 140A and 140B is to be electrically isolated due to a defect, the cutoff is accomplished at position 154 or position 155, as the case may be, and, correspondingly, a storage capacitor that is likewise to be electrically isolated, the cutoff is accomplished at position 151, 152, or 153, as the case may be, via laser trimming or other such known treatment.

Id., col. 15, lines 62-68.

Furthermore, Matsueda does not teach, mention or suggest electrodes that are disposed in parallel at two different portions of an extension portion of the drain electrode. Referring to FIG. 11, no such structure is shown or described in the specification. Thus, there is no "coupling portion to connect with the drain electrode" or a "branch coupling portion which branches off from the coupling portion in between."

The invention as claimed, on the other hand, teaches a liquid crystal display device having electrodes 5a and 33 that are disposed in parallel at two different portions on an extension portion of a thin-film transistor ("TFT") drain electrode 5 and that are connected to each other via a coupling portion 31 and a branch coupling portion 32 that branches out from the coupling portion 31. See, e.g., Specification, Abstract; page 42, line 20 to page 15; FIG 4. As a result, when a leak occurs due to a short circuit between an auxiliary capacitance electrode 11a and a connection electrode 5a, the drain thin line portion 31 is exposed to laser light, which disconnects to stop the leak. See, e.g., Id., page 44, line 25 to page 45, line 22. Moreover, when a leak occurs due to a short circuit between an auxiliary capacitance electrode 11a and a branch-side connection electrode 33, the drain branch thin line portion 32 is exposed to laser light, which disconnects to stop the leak. See, e.g., Id., page 46, line 9 to page 47, line 9.

Accordingly, even when one of the coupling portions 31 or 32 is cut by a laser beam and the pixel electrode 7 is electrically separated from the short circuited electrode 5a or 33, the other electrode 33 or 5a remains in contact with the pixel electrode 7 so that the pixel electrode 7 remains electrically connected to the drain electrode 5. Thus, the liquid crystal display device of the present invention can be easily corrected for leakage defects between the auxiliary capacitance electrode 11a and the drain electrode 5 and between the source wiring and the drain electrode 5.

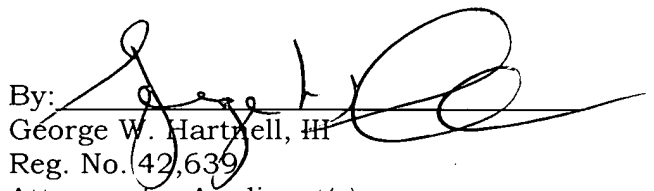
Matsueda does not teach, mention or suggest disposing connection electrodes 5a and 33 in parallel at two different portions on an extension portion of a TFT drain electrode 5, which are connected to each other via a coupling portion 31 and a branch coupling portion 32. Moreover, Matsueda does not teach, mention or suggest exposing a drain thin line portion 31 to laser light to disconnect it from the extension portion to stop leakage due to a short circuit and/or exposing a drain branch thin line portion 32 to a laser light to disconnect it from the extension portion to stop leakage due to a short circuit.

Accordingly, it is respectfully submitted that, the rejected claims are not anticipated and or made obvious by the Matsueda reference, and further, satisfy all of the requirements of 35 U.S.C. 100, et seq., especially § 102(b). Accordingly, claims 7-10 and 17-20 are allowable. Moreover, it is respectfully submitted that the subject application is in condition for allowance. Early and favorable action is requested.

If for any reason a fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge or credit Deposit Account No. **04-1105**.

Respectfully submitted,

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**ANNEX TO RESPONSE TO OFFICE ACTION**  
**CONTAINING MARKED-UP VERSIONS OF AMENDMENTS**  
**TO THE SPECIFICATION AND CLAIMS**

Please **replace** the paragraph beginning at line 16 on page 43 with the following:

As a result, ~~aan~~ superimposing portion between the connection electrode 5a and the auxiliary capacitance electrode 11a functions as a storage capacitance 13a, whereas a superimposing portion between the branch-side connection electrode 33 and the auxiliary capacitance electrode 11a functions as a branch-portion storage capacitance 1c.

Please **amend** the following claims as shown:

7. (Amended) A liquid crystal display device, comprising:  
gate wiring and source wiring disposed in a lattice state;  
a switching element provided on each lattice point;  
a pixel electrode to be connected to a drain electrode of the switching element;  
an auxiliary capacitance electrode which is formed in the same manufacturing process as the gate wiring and disposed in parallel with the gate wiring so as to form a storage capacitance which is serially connected to the pixel electrode; and  
electrodes which are disposed in parallel at two different portions on an extension portion of the drain electrode of the switching element in an extending direction and connected to each other via a coupling portion to connect with the drain electrode, and a branch coupling portion which branches off from the coupling portion in-between,  
wherein:  
~~said the two electrodes disposed in parallel~~ are connected to the pixel electrodes via through holes which are respectively formed in a layer insulating film and stacked via the auxiliary capacitance electrode and insulating film so as to respectively form the storage capacitances.

17. (Amended) A deficiency correcting method of a liquid crystal display device, the liquid crystal display device including: gate wiring and source wiring disposed in a lattice state; a switching element provided on each lattice point; a pixel electrode to be connected to a drain electrode of the switching element; and an auxiliary capacitance electrode which is formed in the same manufacturing process as the gate wiring and disposed in parallel with the gate wiring so as to form a storage capacitance which is serially connected to the pixel electrode,

the liquid crystal display device further including electrodes which are disposed in parallel at two different portions on an extension portion of the drain electrode of the switching element in an extending direction and connected to each other via a coupling portion to connect with the drain electrode, and a branch coupling portion which branches off from the coupling portion in-between,

wherein:

said the two electrodes disposed in parallel are connected to the pixel electrodes via through holes which are respectively formed in a layer insulating film and stacked via the auxiliary capacitance electrode and insulating film so as to respectively form the storage capacitances,

the method, when a short circuit occurs between either one of the two electrodes and the auxiliary capacitance electrode, comprising the steps of:

laser-cutting the coupling portion or branch coupling portion that is connected to the electrode on a short-circuited side off; and

electrically disconnecting the electrode on the short-circuited side from the pixel electrode.